Prairie Update

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Rancher Steers Cattle from River

By Amy-Jo Ehman

When the cattle of rancher Harry Frances go for a drink, they steer clear of the river. Frances, whose farm is on the Qu'Appelle River, brings the water to his cattle instead.

"I fenced the river off so the cattle don't drink there from the spring to the summer. Then I pump the river water into a trough and the cattle come there and drink," says Frances, who keeps 120 to 150 cows and their calves on his ranch on the Piapot First Nation north of Regina.

The Saskatchewan Watershed Authority is encouraging ranchers to prevent cattle from drinking in rivers and streams because of erosion and other damage to the natural area.

"It plays havoc with some of the plant species and the stream banks to have animals going for water directly in the river," says Jason Puckett of the Watershed Authority.

Cattle hooves tear up the vegetation in the riparian area, leaving the banks prone to erosion. They also churn up sediment in the water so it no longer runs clear.

That's a problem for some other users of the river – particularly the fish who lay their eggs on rocks in the river bottom in spring. Sediment obscures the rocks and prevents the eggs from being laid and from hatching in summer.

"After talking to Jason, I remembered how the river used to be and all the fish that were in the river. And I realized I could help," says Frances.

The cattle like it, too

Research shows that cattle with a ready source of water that requires little effort to reach typically have a greater weight gain than cattle who must climb down a riverbank to drink.

As well, pumping can improve the state of the water from the Qu'Appelle River, which carries a lot of sediment from upstream.

"Once the water is pumped into the trough, it settles out, so there's just clean water in the trough. The cattle aren't splashing around in the mud at the water's edge and pushing dirt into the river," says Frances. "They're drinking a better quality water because it's cleaner."

Frances built approximately three miles of fence along the high edge of the valley. He opens the gates in the fall after the fish have hatched and allows the cattle to go down to the river and to eat the fresh valley grass that has been growing on the other side of the fence all summer long.

"It's good for pasture management," he says.

"It's a win-win situation," he says. "The livestock owners are rewarded with higher weight gain on the cattle, and the plants in the riparian area benefit from decreased bank stress."

Lessons for the future

In the summer months, Frances opens his home to Native youth who could benefit from lessons on conservation and caring for Mother Earth.

Many of the young people are from Regina's inner city neighborhoods and don't often get into the countryside. On the ranch, they tend the cattle, ride horses, and take nature walks to learn about the plants.

"More and more youth are coming out," says Frances. "I teach cultural and recreation camps and we do crafts. They learn the traditional ways."

The fencing and watering system on his ranch is one example to show the young people that stewardship of the land begins at home.

"That will be part of teaching them conservation and making them aware of our environment and our Native ways of protecting the environment," he says. "That is very important to us."

Puckett says many ranchers and farmers feel the same way, when given the information and opportunity to improve the health of rivers and streams running by their property.

"When I'm working with ranchers along stream sites, they've usually got great interest in helping to promote sustainable water," he says. "Most of them are tied very closely to the environment and want the water to be in the best shape possible."

Water Use By Saskatchewan's Oil and Gas Industry

Numerous industries in the province depend on Saskatchewan's water resources for their production and operations. In the past, the public has put forward questions specifically regarding the oil and gas industry's use of water in terms of the amounts allocated to the industry, how it is used, and the potential impact on the environment resulting from those uses.

The oil and gas industry uses water in several stages of production. For instance, water is required for most drilling fluids, as well as pipeline/vessel/tank testing and firefighting or domestic purposes.

The industry also uses water for certain enhanced oil recovery methods.

In essence, water-assisted enhanced oil recovery involves injecting water down-hole, or into the ground, in order to push the oil out. In dealing with less viscous oil deposits, this can usually be accomplished by injecting the water in liquid form in a process known as flooding. However, when the oil is heavier, the water must be injected as steam in order to reduce the oil's viscosity and allow it to readily flow. Today, a large percentage of oil production uses one of these water-assistance methods.

David Pryce is Vice-President of Western Canada Operations with the Canadian Association of Petroleum Producers (CAPP), which represents 150 member companies that explore for, develop and produce more than 98 percent of Canada's natural gas, crude oil, oil sands and elemental sulphur.

"Water use is important for us to extract the heavy oil reserves that are in place in Saskatchewan. Saskatchewan is a high heavy-oil bearing area, and it is difficult to get heavy oil out of the ground. So water represents one of the most important ways to help us remove the oil," said Pryce.

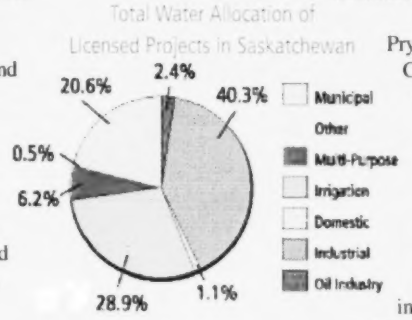
The Government of Saskatchewan's policy is to optimize oil and gas recovery, under which water use is an accepted technology. With primary oil production, the typical recovery rate is 15 percent.

Water-assistance methods typically produce 25 percent to 30 percent more, in effect increasing the province's supply of recoverable oil. Pryce calls this "the responsible use of water to add value to the economy."

There are four types of water that are typically used in oil and gas production. The first type, and the one that companies prefer to use whenever possible, is known as produced water. This is salty water that has been brought up during production along with the oil and/or gas, then separated and re-used.

The second type of water that companies turn to, where available, is saline groundwater. This refers to water drawn from an aquifer that is too saline to be used for consumption by humans or animals, or for agricultural purposes such as irrigation.

Finally, companies may also use fresh groundwater or fresh surface water during the production process. Fresh groundwater or fresh surface water is preferred for steam injection operations, as produced water and saline groundwater contain too many impurities that would be left behind when the water is heated to produce steam.



Water use in Saskatchewan is subject to regulation under the *Saskatchewan Watershed Authority Act*, which is administered by the Saskatchewan Watershed Authority. While domestic water use is exempted, all other uses must be licensed through the Authority.

There are two approvals necessary to use groundwater in Saskatchewan. The first is a Permit to Conduct Groundwater Investigations. The second is a Water Rights License and Approval to Operate. A company must also apply for a Water Rights License and Approval to Operate in order to use surface water for its operation.

An application for any Water Rights License and Approval to Operate must be accompanied by an investigation report by a qualified hydrogeologist. The report must address two primary issues: first, it must demonstrate that the project will be sustainable; and second, it must determine the impacts on other users, and demonstrate that these impacts are either not adverse or else can be mitigated.

According to Pryce, members of the public may not be fully aware of the level of due diligence required by this regulatory structure.

"I think there is potentially a lack of understanding of the strength of the regulatory process that ensures that when we seek a license to use water that we are using every means possible to use that water responsibly, and to protect that water resource," says Pryce.

In total, the water allocation for the oil and gas industry amounts to 2.4 percent of all licensed projects in Saskatchewan. In practice, not all of this allocation is utilized.

Pryce also notes that the CAPP and its members have committed to a policy of continuous improvement in their environmental, health, safety and social performance. In regard to production, that commitment includes supporting water conservation and the development of alternative recovery options such as carbon dioxide injection, vapour extraction (VAPEX), and Toe-to-Heel Air Injection (THAI™) technologies, among others.

The eventual application of these technologies depends on their commercial or economic viability. Saskatchewan's Petroleum Technology Research Centre is providing leading edge research on alternatives such as CO_2 injection.

How Do We Manage and Protect Drinking Water Quality?

Everyone in Saskatchewan needs a good supply of safe, clean drinking water. Saskatchewan's Safe Drinking Water Strategy sets out a comprehensive plan to deal with the risks that affect drinking water and impact the health of Saskatchewan residents. First announced in April 2002, the Strategy's stated vision is "A sustainable, reliable, safe and clean supply of drinking water that is valued by the citizens of Saskatchewan."

The quality of our water is one vital piece of this vision.

In determining the quality of water, many people rely on the obvious – how it looks, tastes, and smells. Although these are important characteristics when assessing water quality, other properties that can't be detected by our senses should also be considered.

In most urban centres, raw water is treated and distributed through a municipal waterworks system. There are about 570 public waterworks across the province serving 850,000 people – 650,000 of them in cities and larger towns.

In rural Saskatchewan, most people rely on private water sources for their daily water needs. Whether the raw water is from a ground or a surface water supply, these supplies are often of poor quality and require some form of treatment to make them safe and aesthetically acceptable.

As water quality varies with each source, the safety of a water supply can't be determined, nor its quality effectively improved and maintained, without first knowing what is in it.

The first step toward improving and maintaining water quality is making sure all drinking water supplies are routinely analyzed. Sample collection is a critical step in receiving an accurate water analysis, as testing is only as good as the samples collected.

The province's public waterworks are regulated by Saskatchewan Environment. To protect the health and safety of their consumers, the owners and operators of these water systems are required to regularly test for a variety of constituents in their treated drinking water. Most municipal waterworks are inspected by Saskatchewan Environment twice per year, which includes testing of water quality and reviewing water quality control records. Saskatchewan Environment uses the Guidelines for Canadian Drinking Water Quality as the provincial criteria for public systems.

The *Rural Water Quality Advisory Program* is a provincial service that was initiated in November 1997. It is designed to help rural residents assess and improve their groundwater quality.

The program is available from all Saskatchewan Watershed Authority offices to anyone who relies on a private water system including farmers, ranchers, acreage owners, northern operators, and trailer park residents. In 2002, 550 clients across rural Saskatchewan received this service, bringing the program total to 2,027 clients served since the program's inception in 1997.

Through the program, a technologist samples the raw water supply. Samples are analysed at a certified laboratory for an extensive number of test constituents.

Groundwater is tested for 31 constituents including major ions, dissolved organic carbon, nitrate, trace metals, specific conductivity, pH, and fecal and total coliform. Surface water supplies are tested for 27 constituents including major ions, dissolved organic carbon, nutrients, chlorophyll a, as a measure of algal biomass, iron, manganese, colour, conductivity, pH, fecal and total coliform, and heterotrophic plate count.

Once results are received, the technologist follows up to explain the results and their implications.

Focus On:
The South Saskatchewan River Watershed

The South Saskatchewan River Watershed incorporates a broad diversity of water users and water-related activities.

About 325,000 people reside in the South Saskatchewan River Watershed, which also contains the largest body of water in southern Saskatchewan, Lake Diefenbaker. This 225-kilometre long reservoir serves many varied interests, including providing domestic water for approximately 40% of Saskatchewan's population. The Watershed is one of seven priority planning areas in the province. If you are interested in more information on activities in the South Saskatchewan River Watershed, please contact Jeff Olson at (306) 786-1364 or Collin McGuire at (306) 953-3243.

1 City of Saskatoon South East Storm Ponds

The South East Storm Ponds are a series of 4-5 inter-connected ponds that provide stormwater management for the Lakewood Suburban Centre, the south tip of the Briarwood Residential Development, and the future Rosewood Residential Development to the south of the ponds. The majority of the storm water collected travels through nearby wetlands before entering the main storage basins, helping improve the quality of the storm water. The ponds are part of a storm water management master plan designed by the City and Associated Engineering – Saskatoon, which focuses on minimizing the disturbance to the wetlands and stabilizing water levels during dry and wet seasons, which will benefit waterfowl. The ponds are among the first to be used in urban Saskatchewan.

2 Wakaw Pump Station

The Wakaw-Humboldt Regional Water Supply System, owned and operated by SaskWater, distributes quality water to almost 10,000 people in the Wakaw-Humboldt area. The system includes this pump station next to the South Saskatchewan River west of Wakaw, two booster stations, a water treatment plant at Wakaw, and approximately 190 kilometres of pipeline. The system currently serves the towns of Hoey, St. Isidore-de-Bellevue, Domremy, Wakaw, Bruno, Humboldt, Muenster, Annaheim and Lake Lenore, as well as eight rural municipalities.

3 Great Sandhills

The Great Sandhills are considered one of Canada's most unique geographical features. Located in the southwest area of the watershed, this fragile area is active with gas exploration and studies on groundwater. The Great Sandhills area covers approximately 1,900 square kilometers. The largest of the sand dunes found there can reach 25 metres in height and cover several hectares of land. These vast dunes, a remnant of the ice ages, are also home to hundreds of diverse plant and animal species.

4 Saskatoon South East Water Supply System

The Saskatoon South East Water Supply System – or SSEWS – includes 158 kilometres of canals, six reservoirs, and a number of pipelines to convey millions of litres of water from a place of abundance to places of need. Known as "The Suez Canal of Saskatchewan," the SSEWS carries water from Lake Diefenbaker to Lake Blackstrap and across the countryside to towns such as Viscount and Lanigan. Over this course, the system supplies water for recreational, industrial, agricultural and municipal users, as well as wildlife in the area.

5 Swift Current Creek Watershed Stewards

The Swift Current Creek Watershed Stewards (SCCWS) were incorporated in 2001. The group has been quite successful in their work to educate, monitor, and assist in cooperative solutions in raising awareness about their watershed. This work includes presenting Water Watchdog workshops, a program developed by the Partners FOR the Saskatchewan River Basin, that provide children with the opportunity to learn about factors surrounding the creek first-hand.

Photo courtesy Swift Current Creek Watershed Stewards

Improving Habitat Along Miry Creek

Rob Oldhaver and his son Greg are taking steps to improve both their farm and their watershed.

Rob and Greg run a mixed farming operation near Cabri. Together, the Oldhavers have 70 cow-calf pairs that they pasture on land which includes the shoreline of nearby Miry Creek.

Not long ago, the area adjacent to the shore was being used as cropland. According to Rob Oldhaver, this land was poorly suited to cropping, given its flat, low-lying terrain and higher-than-desirable salinity levels.

"It's land that probably should never have been broken. It hasn't produced very well for cereal crops. We've tried cereals on it, and it doesn't do very well," says Rob.

The Oldhavers purchased the land about four years ago, with a strategy already in mind as to what they wanted to do with it.

"Our plan all along was to get back into it and expand our livestock operation anyway. It's been cropland now for probably 25 to 30 years, but now we're trying to get it back into grass," says Rob.

In total, the Oldhaver plan to convert approximately 320 acres of land along Miry Creek to grass. In the past two years Rob and Greg have reseeded about 120 of these acres, and they are planning to finish the other 200 acres this season with assistance from the Saskatchewan Watershed Authority.

This land is also within a short distance of known Burrowing Owl habitat. By seeding grass, the Oldhavers are also expanding the potential habitat for these birds and other species.

"It's quite a little ecosystem along that creek, as you can imagine. As we get grass established along there, there should be more habitat for more birds. And the Burrowing Owls should be as well protected as we can do it," says Rob.

Ultimately, the Oldhavers would like to expand their cattle herd to between 200 and 225 cow-calf pairs. Rob notes that the family already has a system in place to manage the use of their pastures, which includes both tame and native grasses. This system includes deferring grazing on the native grass parcels in order to maximize their production.

"We try to go not too early on that native grass. We try to start them off on crested wheat grass and tame grass, and then move into meadow brome and alfalfa. Then we'll probably move into a native grass somewhere later in the summer," says Rob.

In addition, the Oldhavers have installed a remote watering system on the pasture in order to avoid watering the animals directly on the creekside. A generator is used to power a pump that pipes water from the creek to a trough placed in an upland site. They are currently looking at different options that will make it easier for them to move the system between the paddocks as the cattle are rotated through.

Rob Oldhaver's work to improve the watershed goes beyond the beneficial management practices he has implemented on his own operation. Rob is also a member of the South Saskatchewan River Watershed's West Advisory Committee, part of the Saskatchewan Watershed Authority's Watershed and Aquifer Planning initiative.

For Rob, it was natural to get involved with the Advisory Committee. Aside from pasturing cattle alongside one of the major creeks in the watershed, Rob is an irrigator and a Councillor for the Town of Cabri, which draws its water supply from Lake Diefenbaker.

Planning in the South Saskatchewan River Watershed has been ongoing for over a year, with a focus on achieving sound water management and source water protection. According to Rob Oldhaver, the process, which is built on the involvement of local municipalities, First Nations and a range of local stewardship, development and wildlife groups, is moving in the right direction.

"It's been good. I was kind of skeptical when we started. I thought, 'Oh, it's just another study.' But we've been able to put lots of local input into it," says Rob.

Blue Grama (Bouteloua gracilis)

is a grass best adapted to drier prairie sites, actually increasing in numbers in dry years or under prolonged heavy grazing pressure. It forms dense mats of short curly leaves and a characteristic seed head that resembles an eyebrow. Aboriginal peoples used blue grama to forecast the upcoming winter weather. If stalks produced only one seed spike, the winter would be mild; if there were two or more spikes, the winter would be severe.

Minister Honours Voluntary Stewards

Garnet and Rhonda Hoffart receive their award from Minister Forbes

David Forbes, Minister responsible for the Saskatchewan Watershed Authority, honoured a number of Saskatchewan producers at a May 26 awards ceremony for their efforts to conserve vital habitat for two endangered species.

Bengough area producers Garnet and Rhonda Hoffart, and Carmen and Eugene Hoffart, received an award from Minister Forbes for creating viable habitat for endangered Piping Plovers on their land.

The Saskatchewan Watershed Authority helped the two families with several pasture management projects, including permanent cover seeding to convert cultivated land to pasture, and fencing to control their cattle's access to 60 acres of native prairie and critical Piping Plover nesting habitat along Coal Mine Lake. Funding for the projects was provided by the Government of Canada's Habitat Stewardship Program, the Canada Millennium Partnership Program, and the Prairie Shores Program.

Assiniboia area producers Donald and Kathy Stevenson will also be receiving an award from Minister Forbes for creating viable habitat for endangered Piping Plovers on their land.

The Saskatchewan Watershed Authority helped the Stevensons improve the condition and productivity of 80 acres of native pasture along Willow Bunch Lake by seeding it with tame grasses, and building a mile of fence to allow grazing away from the fragile shoreline early in the spring.

This conservation project allows the shoreline to dry and supports the growth of saline-tolerant grass species during the critical period when the Piping Plovers require cover to protect newly hatched young birds. Additional benefits include reduced pressure on the Stevenson's native pasture, and stable soil along the shoreline that is better protected from wind erosion. The Government of Canada's Habitat Stewardship Program provided funding for the project.

Rouleau area producer Irvine Warren received an award from Minister Forbes for providing Burrowing Owl habitat on his land.

Irvine Warren receives his award from Minister Forbes

The Saskatchewan Watershed Authority, in co-operation with Nature Saskatchewan and with funding from the Government of Canada's Habitat Stewardship Program, helped Mr. Warren convert 145 acres of cropland to perennial grasses, and build three miles of fence to allow grazing. This conservation project aims to increase the population of Burrowing Owls by providing them with the ideal habitat to catch mice, voles, beetles and grasshoppers. Additional benefits of the project include reduced erosion and better soil moisture conservation.

Following the May 26th awards ceremony, the Minister introduced Garnet and Rhonda Hoffart and Irvine Warren in the legislature and commended their commitment and contribution to ensuring that these species will be enjoyed by future generations. Eugene and Carmen Hoffart and Donald and Kathy Stevenson were unable to attend the ceremony.

New Watershed Association Technical Coordinator

Since it was established in 1961, the Moose Jaw Creek Watershed Association has concentrated on stewardship practices in the Moose Jaw River Watershed. Recently, with technical assistance from Saskatchewan Watershed Authority, the Association has been guided into taking a more proactive stewardship role.

In April the Association, with assistance from the Canada-Saskatchewan Greencover Technical Assistance Component, hired Twyla Jesse as the Technical Coordinator.

Twyla is quite familiar with the Moose Jaw River Watershed area, having grown up in Drinkwater and attending school in Briercrest. Twyla later attended the University of Regina, and graduated with a Bachelor of Science in Biology in 2004. Twyla's role as Technical Coordinator is to work with local municipalities, landowners, and community groups to promote beneficial management practices (BMPs).

There are a number of BMPs that can affect the quality of surface and ground water, such as rotational grazing, increased vegetative cover, and proper well decommissioning. Basically, Twyla is known as the "go-to girl" – any questions that landowners, RMs, or other community groups have regarding the implementation of BMPs, making essential contacts, and securing funding, they bring to Twyla for the answers.

For more information on the Moose Jaw Creek Watershed Association or to contact Twyla Jesse, call (306) 630-6534.

With funding provided by the Greencover Canada Technical Assistance Component.

Canada

Hello Voluntary Stewards!

Thank you for taking the time to read the Summer 2005 edition of our newsletter. We hope that this busy season finds you well, and that you have enjoyed the articles we have included in this newsletter. And of course, we welcome any comments you have. While we try to focus on different areas or themes in each edition, such as a particular watershed for example, we are always open to suggestions for future issues.

Speaking of the busy season, the Authority's staff are hard at work developing new projects, providing assistance to our existing partners, and delivering informational workshops and other events during these all-too-brief summer months. If you are interested in what's going on in your area, or if you would like to begin a project of your own, be sure to contact one of the Authority's staff members listed below.

At the same time, we are excited to have a number of summer employees joining us again this year to conduct various shorebird, duck, and grassland bird surveys. Their work not only generates important data about various species of concern, it also gives us a glimpse at the results of the projects that have been implemented.

As always, our sincere thanks go to the voluntary stewards who agreed to share their thoughts with us in the profiles contained in this newsletter. These are excellent examples of projects that provide benefits to both the landowner and the land and water they work on.

You can find more information on the Prairie Stewardship Program in back issues of this newsletter. These issues, as well as interactive maps featuring other stewardship project demonstration sites, can be viewed on our Web site at www.swa.ca.

Ryan Lorge

Our Gracious Supporters

• Canadian Wildlife Service and World Wildlife Fund (Endangered Species Recovery Fund)
• Department of Fisheries and Oceans Canada
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• National Fish and Wildlife Foundation (U.S.)
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• Prairie Conservation Action Plan
• Saskatchewan Agriculture and Food
• Saskatchewan Environment through the Fish and Wildlife Development Fund
• SaskPower - Shand Greenhouse
• The Nature Conservancy (U.S.)
• Wildlife Habitat Canada
• Wyoming Game and Fish Department

North American Waterfowl Management Plan

The North American Waterfowl Management Plan is a highly successful international plan aimed at conserving habitat for waterfowl and other bird populations. A new publication detailing Saskatchewan's role in this ambitious initiative is now available. This publication is available in downloadable format on our website, www.swa.ca, or you can obtain a copy by contacting Ryan Lorge at 787-6958.

Coming Events

For more information please contact the following:

Moose Jaw
Tara Mulhern Davidson at 694-3101

North Battleford
Jeremy Brown at 446-7460

Regina
Etienne Soulodre at 787-0661

Swift Current
Bob Springer at 778-8301
Krista Connick at 778-8280

Yorkton
Jason Puckett at 786-5845

Weyburn
Ross Macdonald at 848-2354

Share Your Ideas!

If you have comments or ideas about this newsletter, please contact Ryan Lorge at 787-6958 or e-mail: ryan.lorge@swa.ca.

For specific information about the Prairie Stewardship Program, please contact Jennifer Lohmeyer at 787-8707 or e-mail: jennifer.lohmeyer@swa.ca.

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